What Is Claimed Is:

1. A polymer composite comprising:

polyvinylidene fluoride; and

carbon nanotubes in an amount from about 0.01 to 30% by weight of said composite, wherein said nanotubes have a diameter less than about 100 nanometers. (.1μ)

2. The composite of claim 1, wherein the nanotubes comprise carbon fibrils having:

a substantially constant diameter;

a length greater than about 5 times the diameter;

an ordered outer region of catalytically grown, multiple, substantially continuous layers of ordered carbon atoms having an outside diameter between about 3.5 and 70 nanometers; and

a distinct inner core region, each of the layers and the core being disposed substantially concentrically about the cylindrical axis of the fibrils, said fibrils being substantially free of pyrolytically deposited thermal carbon.

3. The composite of claim 1, wherein the nanotubes comprise singled walled carbon fibrils.

4. The composite of claim 1, wherein the nanotubes are present in an amount between about 0.5 to 20% by weight of the composite.

5. The composite of claim 1, wherein the nanotubes are present in an amount between about 1 to 15% by weight of the composite.

6. The composite of claim 1, wherein the nanotubes are present in an amount between about 13 to 20% by weight of the composite.

7. The composite of claim 1, wherein said composite has a bulk resistivity of less than about 10 ohm-cm.

8. The composite of claim 1, wherein said composite has a bulk resistivity of less than about 1 ohm-cm.

9. The composite of claim 1, wherein said composite has a bulk resistivity of between about 0.02 and 0.08 ohm-cm.

10. The composite of claim 1, wherein said composite has a bulk resistivity within the bulk resistivity range of a pure carbon nanotube mat.

11. The composite of claim 1, further comprising a filler.

12. The composite of claim 12, wherein said filler is graphite.

13. A polymer composite comprising:

a copolymer of vinylidene fluoride and another monomer, and

carbon nanotubes in an amount from about 0.01 to 30% by weight of said composite, wherein said nanotubes have a diameter less than about 100 nanometers.

14. The composite of claim 13, wherein said monomer is selected from the group consisting of hexafluoropropylene, polystyrene, polypropylene, chlorotrifluoroethylene, tetrafluoroethylene, terpolymers and olefins.

15. The composite of claim 13, wherein said monomer is present in an amount less than about 90% by weight of said copolymer.

16. The composite of claim 15, wherein said monomer is present in an amount between about 1 to 70 % by weight of said copolymer.

17. The composite of claim 16, wherein said monomer is present in an amount between about 10 to 50% by weight of said copolymer.

18. The composite of claim 13, wherein the nanotubes comprise carbon fibrils having:

a substantially constant diameter;

a length greater than about 5 times the diameter;

an ordered outer region of catalytically grown, multiple, substantially continuous layers of ordered carbon atoms having an outside diameter between about 3.5 and 70 nanometers; and

a distinct inner core region, each of the layers and the core being disposed substantially concentrically about the cylindrical axis of the fibrils, said fibrils being substantially free of pyrolytically deposited thermal carbon.

19. The composite of claim 13, wherein the nanotubes comprise singled walled carbon fibrils.

20. The composite of claim 13, wherein the nanotubes are present in an amount between about 0.5 to 20% by weight of the composite.

21. The composite of claim 13, wherein the nanotubes are present in an amount between about 1 to 15% by weight of the composite.

22. The composite of claim 13, wherein the nanotubes are present in an amount between about 13 to 20% by weight of the composite.

23. The composite of claim 13, wherein said composite has a bulk resistivity of less than about 10 ohm-cm.

24. The composite of claim 13, wherein said composite has a bulk resistivity of less than about 1 ohm-cm.

25. The composite of claim 13, wherein said composite has a bulk resistivity of between about 0.02 and 0.08 ohm-cm.

26. The composite of claim 13, wherein said composite has a bulk resistivity within the bulk resistivity range of a pure carbon nanotube mat.

27. The composite of claim 13, further comprising a filler.

28. The composite of claim 27, wherein said filler is graphite.

29. A polymer composite comprising:

a compound comprising a mixture of at least two substances selected from the group consisting of polyvinylidene fluoride, copolymer of vinylidene fluoride and another monomer, and another polymer; and

carbon nanotubes in an amount from about 0.01 to 30% by weight of said composite, wherein said nanotubes have a diameter less than about 100 nanometers.

30. The composite of claim 29, wherein said monomer is selected from the group consisting of hexafluoropropylene, polystyrene, polypropylene, chlorotrifluoroethylene, tetrafluoroethylene, terpolymers and olefins.

31. The composite of claim 29, wherein said monomer is present in an amount less than about 90% by weight of said copolymer.

32. The composite of claim 29, wherein said monomer is present in an amount between about 1 to 70 % by weight of said copolymer.

33. The composite of claim 29, wherein said monomer is present in an amount between about 10 to 50% by weight of said copolymer.

34. The composite of claim 29, wherein the nanotubes comprise carbon fibrils having:

a substantially constant diameter;

a length greater than about 5 times the diameter;

an ordered outer region of catalytically grown, multiple, substantially continuous layers of ordered carbon atoms having an outside diameter between about 3.5 and 70 nanometers; and

a distinct inner core region, each of the layers and the core being disposed substantially concentrically about the cylindrical axis of the fibrils, said fibrils being substantially free of pyrolytically deposited thermal carbon.

35. The composite of claim 29, wherein the nanotubes comprise singled walled carbon fibrils.

36. The composite of claim 29, wherein the nanotubes are present in an amount between about 0.5 to 20% by weight of the composite.

37. The composite of claim 29, wherein the nanotubes are present in an amount between about 1 to 15% by weight of the composite.

38. The composite of claim 29, wherein the nanotubes are present in an amount between about 13 to 20% by weight of the composite.

39. The composite of claim 29, wherein said composite has a bulk resistivity of less than about 10 ohm-cm.

40. The composite of claim 29, wherein said composite has a bulk resistivity of less than about 1 ohm-cm.

41. The composite of claim 29, wherein said composite has a bulk resistivity of between about 0.02 and 0.08 ohm-cm.

42. The composite of claim 29, wherein said composite has a bulk resistivity within the bulk resistivity range of a pure carbon nanotube mat.

43. The composite of claim 29, further comprising a filler.

44. The composite of claim 43, wherein said filler is graphite.

45. A method for preparing an electrically conductive composite comprising the steps of:

(a) dissolving a polymer selected from the group consisting of polyvinylidene fluoride and copolymer of vinylidene fluoride and another monomer in a solvent to form a solution;

(b) dispersing nanotubes in said solution; and

(c) adding a precipitating component into said solution to precipitate a composite comprising said polymer and said nanotubes.

46. The method of claim 42, further comprising the step of filtering said solution to isolate said composite.

47. The method of claim 42, further comprising the step of drying said composite.

48. The method of claim 42, wherein said dispersing step is performed with a sonicator or an ultrasonic sonifier.

49. The method of claim 42, wherein said solvent is acetone.

50. The method of claim 42, wherein said solvent is selected from the group consisting of tetrahydrofuran, methyl ethyl ketone, dimethyl formamide, dimethyl acetamide, tetramethyl urea, dimethyl sulfoxide, trimethyl phosphate, 2-pyrrolidone, butyrolacetone, isophorone, and carbitor acetate.

51. The method of claim 42, wherein said precipitating component is water.

52. The method of claim 42, wherein said monomer is selected from the group consisting of hexafluoropropylene, polystyrene, polypropylene, chlorotrifluoroethylene, tetrafluoroethylene, terpolymers or olefins.

53. An electrically conductive composite made by the method of claim 42.

54. A method for making bipolar plates comprising the steps of:

(a) dissolving a polymer selected from the group consisting of polyvinylidene fluoride and copolymer of vinylidene fluoride and another monomer in a solvent to form a solution;

(b) dispersing said nanotubes in said solution;

(c) adding a precipitating component into said solution to precipitate out a composite comprising said polymer and said nanotubes;

(d) isolating said composite;

(e) extruding said composite; and

(f) engraving one or more flow channels on said composite.

55. The method of claim 54, wherein said monomer is selected from the group consisting of hexafluoropropylene, polystyrene, polypropylene, chlorotrifluoroethylene, tetrafluoroethylene, terpolymers or olefins.